PROJECT

Achieving basis knowledge for determination of required characteristic values for the Gyratory compactor. (VSS1999/123)

Erarbeiten von Grundlagen zur Festlegeung von Anforderungskennwerten für den Gyratorversuch

Funding: National (Switzerland)
Duration: May 1999 - Jun 2004
Status: Complete with results

Background & policy context:

The Gyratory test serves for the optimization of the mix composition in the frame of ability tests taking into account the traffic load and the climate.

At this draft method basing on volumetric identity values, the judgement of the resistance against remaining distortion stands first. In the past the Gyratory test was also included into the Swiss standardisation and in the object-related quality assurance concepts for national road construction. As requirement identity values the requirements according to SHRP (Strategic Highway Research program) were partially taken over.

Objectives:

The aim of the research is to formulate principles of establishing request parameters and to close the gap of the missing standard limits. The test apparatus and the experimental procedure are the SUPERPAVE - specifications of the US Strategic Highway Research Program (SHRP) basis.

Methodology:

In a direct comparison of the existing standard requirements for the volumetric Marshall characteristics with the parameters gyrator is clear that the requirements according to SHRP cannot be equated with the existing requirements for Marshall. The gyratory compaction results compared to the Marshall compaction at lower voids content, ie denser specimens.

Based on the available results of the comparison of requirements for SHRP for Gyrator experiment with existing standard requirements for the volumetric Marshall characteristics thus result the statement that a full application of the gyrator requirements for SHRP on designed by Swiss standards and experiences mix cannot be carried out. If the gyrator used experimentally, it means that the standard requirements must be adapted.

It is also proposed, the application range of the gyrator study on the implementation of proficiency testing for the design of special asphalt mixes with high demands to restrict the stability and not to carry out cross-checks under expand the quality assurance. The gyrator examination under used by an aptitude test is consistently the number of revolutions on the match actual traffic loads. A proposal in depending on the traffic load class was drafted.
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Key Results:

On account of the project results of the comparison of the requirements to SHRP for the Gyratory test with the existing norm requirements for the volumetric Marshall identity values results therefore the statement that an unlimited application of the Gyratory identity values to SHRP cannot be equated with the existing norm requirement profile. If the Gyratory test is used, the norm requirements must be adapted.

Documents:

VSS1999/123 (Final report)

STRIA Roadmaps: Other specified
Transport mode: Road transport